

IN THE CLAIMS

1. (previously presented) A targeting apparatus for a locking nail having cross-bores, the axes of which are disposed in an offset relationship from each other by predetermined distances and/or predetermined angles, comprising:

a targeting arm having at least one target bore therein and a holding device to retain a first end of the nail;

a retaining portion having a reception bore in which a retaining bar forming part of the holding device is guided which bar extends parallel to the targeting arm, the retaining bar has a fastener to fix the nail to a leading end of the bar, the retaining bar has several recesses in the area of the reception bore, the reception bore has associated therewith a handle having a movable locking element mounted thereon which can be caused to engage one of the recesses to locate the axial and rotational positions of the retaining bar in the reception bore, wherein the arrangement of the recesses is such that the target bore is aligned with a cross-bore of the nail when the locking element engages a recess and the handle has associated therewith means for indicating whether the locking element is in engagement with the recess or is not in engagement therewith.

2. (previously presented) The targeting apparatus as set forth in claim 1 wherein the handle is rotatably supported on a radially extending outer lug of the retaining portion including the reception bore and the handle actuates a radial cam follower portion which engages with a cam surface formed on a sleeve portion mounted on the retaining portion such that if the handle is rotated in a predetermined direction from an initial position in which the locking element is in its unlocking position, the locking element is moved radially with respect to the reception bore and the cam surface has a first cam surface portion defining the unlocked position and a second cam surface portion

joining the first cam surface portion, wherein the engagement of the radial cam follower portion in the second cam surface portion takes place in a self-locking manner and the radial cam follower portion is biased by a spring in the direction of the first cam surface defining the unlocked position.

3. (previously presented) The targeting apparatus as set forth in claim 2 wherein the radial lug is annularly cylindrical and the cam surfaces are defined by a groove in a sleeve wall and the radial cam follower portion connected to the handle engages the groove.

4. (previously presented) The targeting apparatus as set forth in claim 3 wherein the radial cam follower portion is defined by a cross-pin which radially extends within the groove.

5. (previously presented) The targeting apparatus as set forth in claim 2 wherein the locking pin has an axial bore in which a helical spring first end is mounted and a second end of which is supported on the cross-bore.

6. (original) The targeting apparatus as set forth in claim 4 wherein the cross-pin extends through a cross-bore of the locking pin.

7. (original) The targeting apparatus as set forth in claim 1 wherein the reception bore is defined by an annularly cylindrical component which is adapted to be located in a recess of the target arm by means of a radial outer tongue.

8. (original) The targeting apparatus as set forth in claim 7 wherein the component has at least one window through which the retaining bar can be seen.

9. (previously presented) The targeting apparatus as set forth in claim 1 wherein the reception bore has flat surfaces which are approximately opposed to the locking element and against which the retaining bar is pressed by the locking element.

10. (original) The targeting apparatus as set forth in claim 1 wherein the retaining bar in the area of the recesses, has annular groove by which the locking element can be brought into engagement with the recesses.

11. (currently amended) A targeting device for locating cross-bores in an implanted intramedullary nail comprising:

a targeting arm having at least one guide bore alignable with a cross-bore in the nail and a cylindrical component~~bushing~~ extending along an axis generally perpendicular to said guide bore;

a targeting arm positioning rod rotatably and slidably mounted within a bore of said ~~bushing~~cylindrical component, said rod fixedly mounted on an end of said intramedullary nail, said targeting arm positioning rod including a plurality of offset detents corresponding to the locations of cross-bores on said nail; and

a selectively engageable locking element mounted on said cylindrical component~~bushing~~ moveable into and out engagement with one of the detents on said targeting arm positioning rod wherein the arrangement of the detents~~recesses~~ is such that the guide bore is aligned with a cross-bore of the nail when the locking element engages a detent.

12. (currently amended) The targeting device as set forth in claim 11 wherein said detents on said targeting arm

positioning ~~leater~~ rod are recesses in said rod and said detent element on said cylindrical component ~~bushing~~ is moveable from a first position in said cylindrical component ~~bushing~~ bore wherein said locking element extends partially into said detent recess on said targeting arm positioning rod to a second position in said bore extending fully into said detent recess.

13. (currently amended) The targeting device as set forth in claim 12 wherein said locking element on said cylindrical component ~~bushing~~ is spring biased towards said first position.

14. (currently amended) The targeting device as set forth in claim 13 wherein said cylindrical component ~~bushing~~ has an actuator handle mounted on an outer surface thereof, said handle engaging said detent element on said cylindrical component ~~bushing~~ and being moveable against said spring biasing from a first position wherein said cylindrical component ~~bushing~~ locking element is in said first position to a second position wherein said cylindrical component ~~bushing~~ is in said second position.

15. (currently amended) The targeting device as set forth in claim 14 wherein said handle is rotatably mounted on said cylindrical component ~~bushing~~ outer surface and has a cam surface thereon engageable with a cam follower on said locking element so that rotation of said handle moves said cylindrical component ~~bushing~~ locking element from said first position to said second position against said spring bias.

16. (currently amended) The targeting device as set forth in claim 15 wherein the cam has a first ramp portion and a second ramp portion, the first ramp portion having a steeper angle and the second ramp portion is dimensioned to prevent said

cam follower from entering said first ramp portion unless said cylindrical componentbushing locking element is manually moved into said first position.

17. (currently amended) The targeting device as set forth in claim 11 wherein said cylindrical componentbushing is removably mounted within a fixed bore on said targeting arm.

18. (currently amended) A targeting device for locating cross-bores in an implanted intramedullary nail comprising:

a targeting arm having at least one guide bore alignable with cross-bores in the nail and a cylindrical componentbushing extending along an axis generally perpendicular to said guide bore;

a targeting arm positioning rod rotatably and slidably mounted within a bore of said cylindrical componentbushing, said rod fixedly mounted on an end of said intramedullary nail, said targeting arm positioning rod including a plurality of offset detents corresponding to the locations of said cross-bores on said nail;

a selectively engageable detent element mounted within said cylindrical componentbushing and moveable into and out of engagement with the detents on said positioning rod upon axial and/or rotational movement of the targeting arm positioning rod with respect to said cylindrical componentbushing;

a spring means for biasing said detent element from a first position partially within said bore of said cylindrical componentbushing to a second position fully within said bore and in engagement with the detents on the targeting arm positioning rod.

19. (currently amended) The targeting device as set forth in claim 18 wherein said cylindrical componentbushing has an

actuator handle mounted on an outer surface thereof, said handle engaging said detent element on said cylindrical componentbushing and being moveable against said biasing means from a first position wherein said cylindrical componentbushing detent element is partially within the bore of the cylindrical component in said first position to a second position wherein said detent element is fully within the bore in said second position.

20. (currently amended) The targeting device as set forth in claim 19 wherein said handle is rotatably mounted on said cylindrical componentbushing outer surface and is engageable with a cam follower on said detent element which engages a cam surface so that rotation of said handle moves said detent element from said first position to said second position against said spring bias.

21. (currently amended) The targeting device as set forth in claim 20 wherein the cam surface has a first ramp portion and a second ramp portion, the first ramp portion having a small angle dimensioned to prevent said cam follower from entering said second ramp portion unless said cylindrical componentbushing detent element is moved into said second position.